

PROGRAM

1996 FASEB Summer Research Conference

Vermont Academy, Saxtons River, Vermont

August 3 - August 8, 1996

Folic Acid, Vitamin B₁₂ and One Carbon Metabolism

Session 1: "B₁₂ and Folate Enzymes and the Regulation of Methionine Synthesis"

Discussion Leader: Rowena Matthews, University of Michigan, Ann Arbor

Rowena Matthews (University of Michigan), "Structural and functional studies on the domains of a large protein: cobalamin-dependent methionine synthase."

Ruma Banerjee (University of Nebraska), "Properties of methylmalonyl-CoA mutase and methionine synthase accessory proteins."

Joanne Stubbe (Massachusetts Institute of Technology), "Ribonucleotide reductase."

Sheldon P. Rothenberg (Brooklyn, VA, New York), "Human Transcobalamin II."

Session 2: "Metabolic Control of One Carbon Metabolism."

Discussion Leader: Dean Appling, Department of Chemistry and Biochemistry, University of Texas, Austin.

Edwin Cossins (University of Alberta, Edmonton), "Folate metabolism of photosynthetic cells: mitochondrial and cytosolic enzymes that catalyze the synthesis of 10-formyl-THF, 5,10-methenyl-THF and 5,10-methylene-THF."

John Brosnan (Memorial University of Newfoundland, Canada), "Metabolic regulation of the glycine cleavage enzyme complex."

Dean Appling (University of Texas, Austin), "Compartmentalization of purine synthesis and one carbon metabolism."

Charles Halsted (University of California, Davis) "Intestinal and liver folate binding proteins."

Session 3: "Folate and B₁₂ Deficiency-Metabolic Effects."

Discussion Leader: Irwin Rosenberg, USDA Human Nutrition Center on Aging, Boston.

Bruce Ames (University of California, Berkeley), "Folate deficiency and DNA damage."

Mark Koury (Vanderbilt University), "Apoptosis of hematopoietic cells in folate deficiency."

Jill James (DHHS/FDA, Jefferson, Arkansas), "Progressive site-specific hypomethylation with chronic folate/methyl deficiency in rats: evidence for strand breaks and uracil within the hepatic p53 gene."

Irwin Rosenberg (Human Nutrition Center on Aging, Boston), "Folate and B₁₂ deficiency in aging."

Jesse F. Gregory (University of Florida), "Stable isotope methodologies and folate availability."

Session 4: "S-Adenosylmethionine and Methyl Group Transfer Reactions"

Discussion Leader: Barry Shane (University of California, Berkeley)

Jose Mato (CSIC, Madrid), "Regulation of hepatic methionine S-adenosyltransferase"

Conrad Wagner (Vanderbilt University), "Function and structure of glycine N-methyltransferase."

Peter Jones (University of Southern California, Los Angeles), "DNA methylation and cancer"

Steven G. Clarke (UCLA, Los Angeles), "Role of methyltransferases in the repair of age-damaged proteins."

Session 5: "Chemotherapeutic Targets - Enzymes."

Discussion Leader: Anne Jackman, Institute of Cancer Research, Surrey, England.

Richard Moran (Medical College of Virginia) "Mammalian glycinamide ribonucleotide formyltransferase and lometrexol therapeutics."

Ann Jackman (Institute of Cancer Research, England), "Design of thymidylate synthase inhibitors."

Joseph Bertino (Memorial Sloane-Kettering Cancer Center, New York), "Gene therapy with mutant forms of dihydrofolate reductase."

Edward Chu (National Cancer Institute) "Translational regulation of thymidylate synthase."

Yehuda Assaraf (Technion, Israel) "Drug-induced amplification of mitochondrial and folate transporter genes."

Session 6: "Genetic Heterogeneity and Inborn Errors of B₁₂ and Folate Enzymes."

Discussion Leader: Rima Rozen, McGill University, Montreal

Rima Rozen (McGill University), "Genetics of methylenetetrahydrofolate reductase."

Jan Kraus (University of Colorado Medical Center, Denver)

David Rosenblatt (McGill University, Montreal), "Mutation analysis in the inborn errors of cobalamin metabolism: a beginning."

Session 7: "Homocysteine Biology and Role in Vascular Disease."

Discussion Leader: Per Ueland, University of Bergen, Norway

Jacob Selhub (Human Nutrition Center on Aging, Boston), "Nutritional regulation of plasma homocysteine levels."

Helga Refsum and Per Ueland (University of Bergen, Norway), "Cardiovascular risk factors and the homocysteine distribution." and "Characterization of hyperhomocysteinemic subjects recruited from a healthy population."

Sally Stabler (University of Colorado Medical Center, Denver), "Patterns of other vitamin-related metabolites in hyperhomocysteinemic states."

(Arthur) Mu En Lee (Harvard University, Boston), "Induction of cyclin A gene expression by homocysteine in vascular smooth muscle cells."

Session 8: "Folate and Neural Tube Defects."

Discussion Leader: Regine Steegers-Theunissen, University of Nijmegen, Netherlands.

Regine Steegers-Theunissen (University of Nijmegen, Netherlands), "Folate, vitamin B₁₂ and methionine during early human pregnancy."

John Scott (Trinity College, Dublin, Ireland), "Impaired methionine synthase activity as a locus for neural tube defects?"

Patrick Stover (Cornell University, Ithaca), "Changes in one carbon metabolism that induce neural tube defects."

Session 9: "Chemotherapeutic Targets-Folate Transport and Accumulation."

Discussion Leader: David Goldman, Medical College of Virginia

Philip Low (Purdue University, Indiana), "Folate-mediated targeting of toxins, antisense oligonucleotides and genes to tumors."

David Goldman (Medical College of Virginia), "Folate transporters and drug interactions."

Frank Sirotnak (Memorial Sloane-Kettering Cancer Center, New York), "Comparative biology and biochemistry of folate transport in mammalian tissues."

Jeffrey Moscow (National Cancer Institute, Bethesda), "The biology of the reduced folate carrier."

Gerrit Jansen (Free University Hospital, Amsterdam), "Regulation of folate transporters."